

EXHIBIT O

MIRIAM LEESER PHD
SINGULAR COMPUTING vs GOOGLE

March 08, 2023

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UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

* * * * *
SINGULAR COMPUTING, LLC.,
Plaintiff,
vs.
GOOGLE, LLC.,
Defendant.
* * * * *

No. C.A. No:
1:19-cv-12551-FDS

VIDEOCONFERENCE DEPOSITION OF MIRIAM LEESER, Ph.D.,
Deposition taken with all parties appearing remotely,
on Wednesday, March 8, 2023, commencing at 10:59 a.m.

Court Reporter:
Pamela J. Carle, LCR, RPR, CRR

MIRIAM LEESER PHD
SINGULAR COMPUTING vs GOOGLE

March 08, 2023
33

1 on an FPGA using VFLOAT. You testified to that
2 earlier. Do you recall that?

3 A. Yes.

4 Q. Do you believe that any one of those
5 circuits would anticipate the asserted claims?

6 MR. NARAYEN: Objection, vague.

7 A. So I lay out in the report what the
8 claims are in the patent and how I view the VFLOAT
9 library anticipates those claims.

10 BY MR. SEEVE:

11 Q. Okay. So in the report you talk about
12 a configuration that you and Pavle Belanovic
13 created that contains 61 C2 multipliers. Do you
14 recall that?

15 A. Yes, I do.

16 Q. And C2 refers to a particular floating
17 point format that has 1 sign bit and 9 mantissa
18 bits and 6 exponent bits, is that correct?

19 A. I know I refer to that particular
20 configuration in my report, I don't remember
21 exactly the numbers. Can you tell me what page
22 that is on?

23 Q. For example, you can just look at page
24 46, paragraph 120. It's at the top of page 46.

25 A. It was, yes, C2 format with 6

MIRIAM LEESER PHD
SINGULAR COMPUTING vs GOOGLE

March 08, 2023
150

1 MR. SEEVE: I don't know who that is.

2 MR. NARAYEN: Is says Prince Lobel.

3 I'm just curious, if it must be someone else
4 joining us.

5 MR. SEEVE: I'm sorry, I just got a
6 message indicating it's our paralegal, who for
7 some reason doesn't have her name showing up.

8 MR. NARAYEN: Okay.

9 BY MR. SEEVE:

10 Q. So back to the SRAM. Just for the
11 purposes of clarity in the transcript I want to
12 just clarify, you are referring to the box labeled
13 SRAM that is to the left of the bottom blue box in
14 the diagram, and it's just to the right and under
15 the green box labeled PCI controller, is that
16 correct?

17 A. So there are, I believe, 13 boxes
18 labeled SRAM in this diagram, and any of them are
19 memories that are accessible to the three PEs. The
20 one off of the local address data bus is the one
21 just to the right of the PCI controller box.

22 Q. The C2 multipliers were on only one of
23 the PEs, though, right?

24 A. That's correct.

25 Q. So they wouldn't have had access to all

MIRIAM LEESER PHD
SINGULAR COMPUTING vs GOOGLE

March 08, 2023
151

1 of these SRAMs, would they?

2 A. Whatever PE they were on they would
3 have had access to SRAM. Which particular boxes
4 depends on what --

5 Q. And in your report the SRAM you
6 referred to is also an SRAM that was accessible by
7 the host workstation as well, right? That's in
8 paragraph 164.

9 A. So paragraph 164 does, in fact, talk
10 about SRAM accessible from the host, and I believe
11 any of the SRAM -- well, it's clear that that one
12 box we're talking about was accessible to the host.

13 Q. I'm sorry, I can't tell, are you in the
14 middle of an answer?

15 A. The block that's hanging off the local
16 address, slash, data bus that's labeled SRAM is
17 accessible directly from the host over the PCI bus.

18 Q. So your contention is the execution
19 unit, which the court has construed to mean a
20 processing element comprising an arithmetic
21 circuit paired -- sorry, let me start again.

22 You're arguing that the execution unit,
23 which the court has construed to mean processing
24 element comprising an arithmetic circuit paired
25 with a memory circuit, is met by the C2

MIRIAM LEESER PHD
SINGULAR COMPUTING vs GOOGLE

March 08, 2023
152

1 multiplier, which includes the arithmetic circuit
2 and the SRAM that's hanging off the data bus,
3 correct?

4 MR. NARAYEN: Objection,
5 mischaracterizes the witness' testimony,
6 mischaracterizes the report.

7 A. I would say I think that's correct.

8 BY MR. SEEVE:

9 Q. And let's turn to the term low
10 precision high dynamic range. You're aware that
11 the court has construed this term as well,
12 correct?

13 A. Correct.

14 Q. And the court construed low precision
15 high dynamic range to be defined or construed as
16 defined in the claim itself. Do you understand
17 that?

18 A. Yes, I do.

19 Q. And do you understand the court's
20 construction to be referring to the numbers that
21 specifically defined the limits on the level of
22 precision and the range representable by the
23 signals that it clears, you understand that?
24 That's what the court's construction is referring
25 to?